

Louisiana
Department of Transportation
And
Development

Traffic Control Standard
Number 1

Revised January 13, 2005

Approved 1-13-05

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slc

Adjustable Face Traffic Control Signal Heads and Beacon Heads

General

All traffic signal heads and all beacon heads shall be of the adjustable type. Materials and construction of both types of sections shall be the same and shall conform to the specifications that follow.

Definitions

Signal Head- An assembly containing one or more signal faces that may be designated accordingly as one-way, two-way, etc.

Signal Face- That part of the signal head provided for controlling traffic in a single direction. Turning indications may be included in a signal face.

Signal Section- That part of a signal face containing an optical unit.

Optical Unit- For an 8" signal head an assembly of a lens, reflector, lamp, and lamp socket with the necessary supporting parts to be used for providing a single signal indication.
For a 12" signal head an assembly of a reflector and lamp socket with the necessary supporting parts to be used for providing a single signal indication.

Signal Indication- The illumination of a traffic signal lens or equivalent device or a combination of several lenses or equivalent devices at the same time.

These specifications are for both 8" and 12" traffic signal sections and shall be considered as standard. When either 8" or 12" sections are specified, all applicable portions shall apply with the exception of the sizes.

In general, a signal face will usually have three or four sections (never less than three) and the beacon face will usually have only one section. However, the number of faces per head and the number of sections per face shall be specified on each order.

Position of Signal Indications

All signal indications shall be in a straight vertical line and shall be in the following order, although all indications shown need not be included in all cases. Position 1 shall be at the top and position 6 at the bottom.

<u>Position</u>	<u>Signal Indication</u>
1	Red
2	Amber
3	Green (solid)
4	Straight Thru Arrow
5	Left Turn Arrow
6	Right Turn Arrow

In each case, the color indications to be furnished shall be specified on the order.

Beacon Indications

Unless otherwise specified, beacon indications shall be as follows:

- a. 3-way beacon to consist of 2 amber and 1 red indication.
- b. 4-way beacon to consist of 2 amber and 2 red indications.

When other lens indications are required or when other than the above type beacons are ordered, the indications shall be specified on the order.

Housing

A. Cast Aluminum

Housings shall be constructed of cast aluminum. If die cast, housings shall be constructed of aluminum alloy conforming to ASTM specification B-85 or B-108 and have a tensile strength of not less than 17,000 pounds per square inch (lbs/in²). Housings shall also be clean, smooth, and free from flaws, cracks, blowholes, and other imperfections.

Housings shall be sectional, and each signal face shall consist of as many sections as there are optical units. Each signal face, combined with a suitable top and bottom, and with all sections being rigidly and securely fastened, shall produce one weather-tight assembly.

Each face shall have round openings on top and bottom measuring 2 ± 0.004 " after painting. The complete assembly shall rotate about the centerline of the openings and shall be rain-tight without the use of sealing materials. A serrated edge shall be part of the section to provide positive locking in any direction in the horizontal plane. The serrations shall be such that any signal face will resist a torque of 20 foot-pounds (ft-lbs) when assembled in accordance with manufacturer's recommendations.

The portion of the housing adjacent to the bracket shall be properly reinforced for sufficient strength against breakage from shock. Labyrinths shall be provided at bracket attachment points and at section joints to insure water shedding. Supporting brackets or trunnions shall be used at both the top and the bottom of each section assembly to rigidly support all faces.

All equipment edges shall be deburred and smooth.

B. Plastic (when specified)

Housings shall consist of one piece of plastic material, of approved composition, with sides, top and bottom integrally molded. Each housing shall have a minimum thickness of 0.090", and be

ribbed so as to produce the strongest possible assembly consistent with lightweight. Two sets of internal bosses shall be provided in each section for horizontal mounting of a terminal block.

The top and bottom exterior of each housing shall be flat and parallel to insure perfect alignment of assembled sections. The top and bottom of each housing shall also have a 2" opening and slip-fit, 1-1/2", pipe bracket.

Individual sections shall be fastened together either with machine screws between each section or by the three-bolt and two-washer method. Complete signal faces shall provide positive-lock positioning when used with serrated brackets, mast arms, or span wire fittings.

Housing Door

Doors shall be of the same material as the housing. Each door shall be properly hinged and held securely to the body of the housing by simple non-corrosive locking devices that can be operated without the use of tools. All other door parts, such as hinge pins, lens clips, etc., shall also be of non-corrosive material or material treated to retard corrosion. Door hinge pins shall be designed to prevent the door from accidentally becoming disconnected from the housing when opened, regardless of the signal position. All doors shall be field removable with simple tools.

A weather-resistant, mildew-proof neoprene, or silicone rubber sponge gasket, shall be provided between the body of the housing and the doors for excluding dust and moisture.

Visors

Each signal section shall have a visor tilting slightly downward from the horizontal and be one of the types shown in **Figure 1**. All visors shall be of sheet construction, aluminum alloy, having a minimum thickness of 0.05" (No. 18 U.S. Gauge). All visors shall attach tightly to each section door with non-corrosive screws preventing any perceptible filtration of light between the door and the visor. Stock numbers for visors are shown in Figure 1.

Optical Unit

Each complete optical unit assembly shall consist of a lens, reflector, lamp and lamp socket for an 8" signal head or reflector and lamp socket for a 12" signal head. The optical unit, together with the visor, shall be designed to eliminate return outside rays entering the unit from above the horizontal (known as sun phantom). The optical unit shall also be designed to prevent light from escaping from one indication to another.

The lens (*if required*) shall meet the latest ITE Standard for Vehicle Traffic Control Signal Heads on performance and material. A certification from an independent laboratory shall be submitted as part of the literature with the bid. The color for each lens shall be within the ITE specification boundaries relating to the 1931 C.I.E. (I.C.I.) chromatic diagram when equipped with an approved lamp and reflector properly operated and focused. A circular convex lens shall have the dimensions as shown in **Figure 6** for a nominal 8" lens (**Stock #14-04-5510, #14-04-5512, and #14-04-5514**). A circular convex lens shall have the dimensions as shown in **Figure 7** for a nominal 12" lens (*if required*) (**Stock #14-04-5520, #14-04-5522, and #14-04-5524**). All lenses shall be made of ultraviolet stabilized plastic (polycarbonate resin material) and must be durable on prolonged exposure to weather. It shall be free from streaks, wrinkles, chips, or bubbles that in any way detract

from the lens efficiency or use.

All 8" lenses shall be capable of operating with, and marked appropriately, that the minimum lamp wattage is 69 watts. All 12" lenses (*if required*) shall be capable of operating with, and marked appropriately, that the minimum lamp wattage is 135 watts. The standard light distribution shall be wide angle. All plastic lenses shall be clearly marked to indicate the maximum wattage of the lamp to be used.

All arrow (*if required*) indications shall be produced by use of a non-corrosive metal template affixed in the door housing with the lens. The template shall be coated with black opaque enamel of sufficient thickness to operate under a 200-Watt lamp at its rated voltage. The template shape and dimensions are shown in **Figure 2 (Stock #14-04-5554, and #14-04-5560)**. The lens, with the template secured, shall be designed for use as either a straight through, left, or right arrow. Furthermore, all arrow lenses shall be 12" diameter and conform to the above lens specification.

All reflectors shall be made of specular ALZAK aluminum and shall be furnished with an anodic coating having a minimum thickness of 0.0003". The reflectors shall be spun or punched from metal having a minimum thickness of 0.025". The reflector shall be equipped with a flange on the outer edge to stiffen the reflector to insure it holds true to shape. The reflecting surface shall have a mirror finish, and be totally free of flaws, scratches, defacements, or mechanical distortions.

Reflectors shall be mounted in the housing. The mounting hardware is to be of a non-corrosive material so arranged that the reflector can easily swing out of the housing and away from the door to provide easy access for all maintenance and repairs. In each case, the method of mounting and fastening shall be sufficiently rigid to secure proper alignment between the lens and reflector when the door is closed. An endless weather resistant neoprene, or silicone, rubber gasket shall be provided between the reflector and lens to insure a dust-tight seal. The gasket material shall remain flexible during the life of the housing.

The reflector shall have an opening in the back for the lamp receptacle. The receptacle shall be made of heat-resistant material designed to hold a traffic signal lamp (69 watts with 2-7/16" light center for 8" signals, 150 watts with 3" light center for 12" signals) at the focal point of the reflector. The receptacle shall be provided with a lamp grip to prevent the lamp from unfastening due to vibration. Provisions shall also be made on either the receptacle or reflector holder to permit the proper focusing of lamps. In addition, a suitable dust-tight gasket (not cork) shall be placed between the reflector and the receptacle.

Each receptacle shall be provided with two (2) color-coded No.18 American Wire Gauge (AWG) stranded lead wires. The wires shall be Type TW (or approved equal) and shall be securely fastened to the base of the receptacle socket. One (1) terminal block shall be provided with each signal head. The terminal block location and wire information for each type of signal head section is shown in **Figure 8 (Stock #14-04-5108 and #14-04-5112)**, **Figure 9**, and **Figure 10**. When a 3-, 4-, or 5-section signal head configuration is specified, the corresponding figure shall be applied. In addition, all wires shall be long enough to allow the reflectors to swing completely out of the housing without disconnecting any circuits.

Mounting (when specified or ordered separately).

Both signal and beacon sections shall be suitable for one of the following standard mounting configurations. The type of mounting for each shall specify on the order:

1. Span Wire - There shall be two (2) basic components of span wire mounting hardware for *signals*: The span wire clamp and disconnect hanger. The design and dimensions of the components shall be as shown in both **Figure 3 (Stock #14-08-1310)** and **Figure 4 (Stock #14-08-1320 and #14-08-1326)**. The cable clamp, consisting of a saddle (shoe), cable bar (protector), and 2 “L” bolts with nuts and washers, shall attach to the span wire and to the tri-stud balancer to provide a horizontal pivot between the clamp and fitting(s) below the clamp. The attachment point of the clamp and fittings below the clamp shall consist of a $\frac{5}{8}$ ” clevis opening and a $\frac{5}{8}$ ” suspension (hanger) pin. The tri-stud balancer shall have a minimum of five (5), or a maximum of six (6), in-line positions, with one (1) position to be centered over the mechanical attachment point of the device. A serrated edge shall be provided on the attachment point of the tri-stud balancer to provide for positive locking in any direction in the horizontal plane. A balance adjuster assembly may be required for proper signal head positioning (see **General Information Section** – “Brackets and Balance Adjuster Assembly” for further details).

There shall be two (2) basic components of span wire mounting hardware for *beacons*: The span wire clamp and tri-stud hanger assembly. The design and dimensions of the components shall be as shown in both **Figure 3** and **Figure 5 (Stock #14-04-6000)**. The clamp shall attach to the tri-stud hanger using the identical method as previously described for signals. The tri-stud hanger shall have a minimum of five (5), or a maximum of six (6), in-line positions, with one (1) position to be centered over the mechanical attachment point of the device. A weather-resistant, neoprene grommet shall be provided with the device. The grommet shall have two (2) “knockout” type openings to allow for a maximum of two (2) $\frac{1}{2}$ ” signal cables into the device. The device shall contain a wire way to allow signal cables to pass through the device and into the beacon section. A serrated design shall be provided on the attachment point of the device to provide for positive locking in any direction in the horizontal plane.

2. Pedestal - Section shall be furnished with a slip fitter for placement on a 4-inch I.D. pipe pedestal utilizing setscrews for correct aligning of the signal. Provisions for base feed shall be incorporated in the design of the section assembly. The section-bracket assembly shall incorporate a weatherproof terminal compartment or box with a removable cover allowing complete access. The box shall be of suitable size to accommodate, and shall come equipped with, a terminal strip with terminals equal to the number of signal indications in the section plus one or more for common. The terminal compartment shall be neat in appearance and shall be adjacent to or near the pedestal mount. In no case shall field wires be required to pass through a signal section or face to reach the terminal compartment. A terminal compartment integral with the bracket shall be permitted. Supporting brackets, trunnions and fittings may be made of cast aluminum, steel or cast iron. All parts made of ferrous materials shall be treated to resist corrosion.

Section B

Optically Programmed, Adjustable Face Traffic Signal Sections

General

The signal shall permit the visibility zone of the indication to be determined optically and require no louvers. The projected indication may be selectively visible or veiled anywhere within 15 degrees of the optical axis. No indication shall result from external illumination nor shall one light unit illuminate a second.

Optical System

The optical limiter shall provide an accessible imaging surface located at the point of the optical axis for objects 900 to 1200 feet in distance, and permit an effective veiling mask to be variably applied as determined by the desired visibility zone. The optical limiter shall be provided with a positive indexing means and composed of heat resistant glass. The objective lens shall be a high-resolution, planar, incremental lens hermetically sealed within a flat lamination of weather-resistant acrylic or approved equal. The lens shall be symmetrical in outline and may be rotated to any 90-degree orientation about the optical axis without displacing the primary image. The optical system shall accommodate projection to separate portions of the roadway such that only one indication will be simultaneously apparent to any viewer. The projected indication shall conform to ITE transmittance and chromaticity standards. When specified, a two-color section is to be provided to meet these specifications, but to produce two sequential indications from one section.

Photo Controls

Each signal section shall include an integral means for regulating its intensity between limits as a function of the individual background illumination. The response shall be proportional and essentially instantaneous to any detectable increase of illumination from darkness to 100 ft.-c, and damped for any decrease from 100 ft.-c.

Electrical

The lamp shall be a nominal 150-watt PAR, 120 volt AC, three prongs, sealed beam having an integral reflector with stippled cover, and an average rated life of at least 6,000 hours. The lamp fixture shall consist of a separate accessible housing and an integral lamp support, with an indexed ceramic socket, and self-aligning, quick release lamp retainer.

The electrical connection between the case and lamp housing shall be accomplished with an interlock assembly that disconnects the lamp holder when opened. Each signal section shall include a covered terminal block that utilizes a clip, or screw, attachment of lead wires. No. 18 AWG stranded, concealed, and coded wires shall interconnect all signal sections to permit field connections within any section.

Construction

Die cast aluminum parts shall conform to ITE alloy S5 or SG3 of ASTM Specification B85-48T or the latest revision thereof. The exterior of the signal case, lamp housing, and mounted flanges shall be coated with high quality, baked enamel primer and finish paint (Outdoor Advertising Association No. 144 Green). The lens holder and interior of the case shall be optical black.

The signal case and lens holder shall be pre-drilled for backplates and visors. The hinge and latch pins shall be stainless steel. All access openings shall be sealed with weather resistant neoprene, or silicone, rubber gaskets.

Sheet metal parts, including visors and backplates, shall conform to ITE material requirements (Aluminum alloy not less than 0.05 inches - No. 18 Gauge). All parts shall include a chromate preparatory treatment and optical black finish, with the exception of the outside surface of the visor that is specified previously to be green.

Mounting

The signal shall mount to a standard 1-1/2 inch fitting as a single section face, or in combination with other signals. The signal section shall be provided with an adjustable connection that permits incremental tilting from 0 to 10 degrees above or below the horizontal while maintaining a common vertical axis through couplers and mounting hardware. Terminal connections shall permit external adjustment about the mounting axis in 5-degree increments. The signal assembly shall be capable of being mounted and serviced with ordinary tools.

Attachments such as visors, backplates, or adapters shall conform, and readily fasten, to existing mounting surfaces without affecting water and light integrity of the signal.

General Information

The signal you propose to furnish shall meet all of the requirements specified in this TCS as pertains to standard lenses and/or LED signal modules and their fit in the signal. The Department makes no guarantee as to any brand or model which we may be using now or in the future.

Each bidder, from whom a sample is requested, will be allowed to submit one sample to be equipped exactly as it is proposed to be furnished to the Department. If this sample does not meet the required specifications, bid will not be considered for award. The sample shall be painted Louisiana green (Outdoor Advertising Association No. 144 Green).

Finish

All signal sections and mounting equipment, with the exception of lenses, gaskets, reflectors, terminal blocks, wiring, sockets, and span wire clamps, shall be finished both inside and out with two coats of high grade green enamel (Outdoor Advertising Association No. 144 Green). Each coat shall be independently baked to resist peeling and chipping. Visors, as previously mentioned, shall be painted green on outside and black on the inside. Color chip supplied upon request.

Backplates

Backplates, when specified, shall be flat aluminum shields for standard 8 inch, 12 inch, and combination faces. Backplates shall be constructed of sheet aluminum alloy not less than 0.05 inches (No. 18 U.S. Gauge) in thickness and painted dull black. Backplates shall mount on the main housing behind each signal face and shall not obstruct door opening. The width of a backplate shall be a minimum of 5 inches and a maximum of 8 inches.

Brackets and Balance Adjuster Assembly

Brackets utilized in the assembly of two- (2), three- (3), and four- (4) way signal sections shall be so constructed as to have the center of the face attachment points arranged on an 8-1/2-inch radius. The bracket at the supported end of the signal section shall be of 1-1/2-inch conduit, or have an equivalent inside clearance, for electrical wiring. The bracket at the opposite end of the section may be either the same as the top or of solid construction. A setscrew locking device, or equivalent, that engages a drilled hole shall be provided at each joint on the bracket where conduit-type joints are used.

The balance adjuster assembly shall be fabricated from steel and iron alloys and shall be free of voids, pits, dents, molding, and excessive marks. All design radii shall be smooth and cosmetically acceptable, free of molding fins, cracks and other exterior blemishes. All material shall conform to current ASTM and ITE standards.

All material, with the exception of the clevis pin, shall be of galvanized steel construction. The clevis pin shall be of zinc coated steel material.

The eyebolt length shall be approximately 3-1/8". The eyebolt shaft shall have 5/8"-11NC x 1-3/4" threads. The Shaft shall be drilled for a 1/8" x 5/8" roll pin. (Note: The roll pin shall be installed after assembly to body to prevent accidental separation. The diameter of the top of the eyebolt shall be sized as required for containing a 5/8" eye opening.

The body length and width shall be approximately 2-7/8" and 1-3/4", respectively. The body shall be machined for 5/8" clevis pin, a 1/2" tightening bolt, and a 5/16"-18NC positioning set screw. A 1/8" slot shall be either cast or machined into the tightening bolt side of the body allowing the body to act as a hinge and tighten around the eyebolt. The setscrew, when tightened, shall allow the body to remain stable while securing the through bolt. (See **Figure 11 (Stock #14-04-6085)** for more details).

The balance adjuster assembly shall have a 5/8"-11NC nut and lock washer assembled onto the eyebolt shaft. The eyebolt is to be threaded into the body and secured with a 5/16"-18NC square head set screw. The roll pin shall be installed into the eyebolt shaft to prevent accidental separation. A 1/2"-13NC x 2 1/2" hex head bolt, lock washer, and hex nut shall be assembled into the tightening portion of the body. A 5/8" x 2" clevis pin and 5/32" x 1 1/2" cotter pin shall be installed through the clevis portion of the assembly.

Plugs (Rosette Cap / with neoprene plug) (Stock #14-04-6326)

All unused openings shall be closed utilizing standard 1-1/2 inch threaded plugs with a neoprene gasket. All openings shall have a watertight seal. The minimum length shall be 1-1/2 inches long and shall not interfere with any internal parts.

All plugs made of ferrous material shall be treated to resist corrosion, with paint as an unacceptable treatment. The exposed portion of the plug shall conform in color to the "General Information - Finish Section" of this standard.

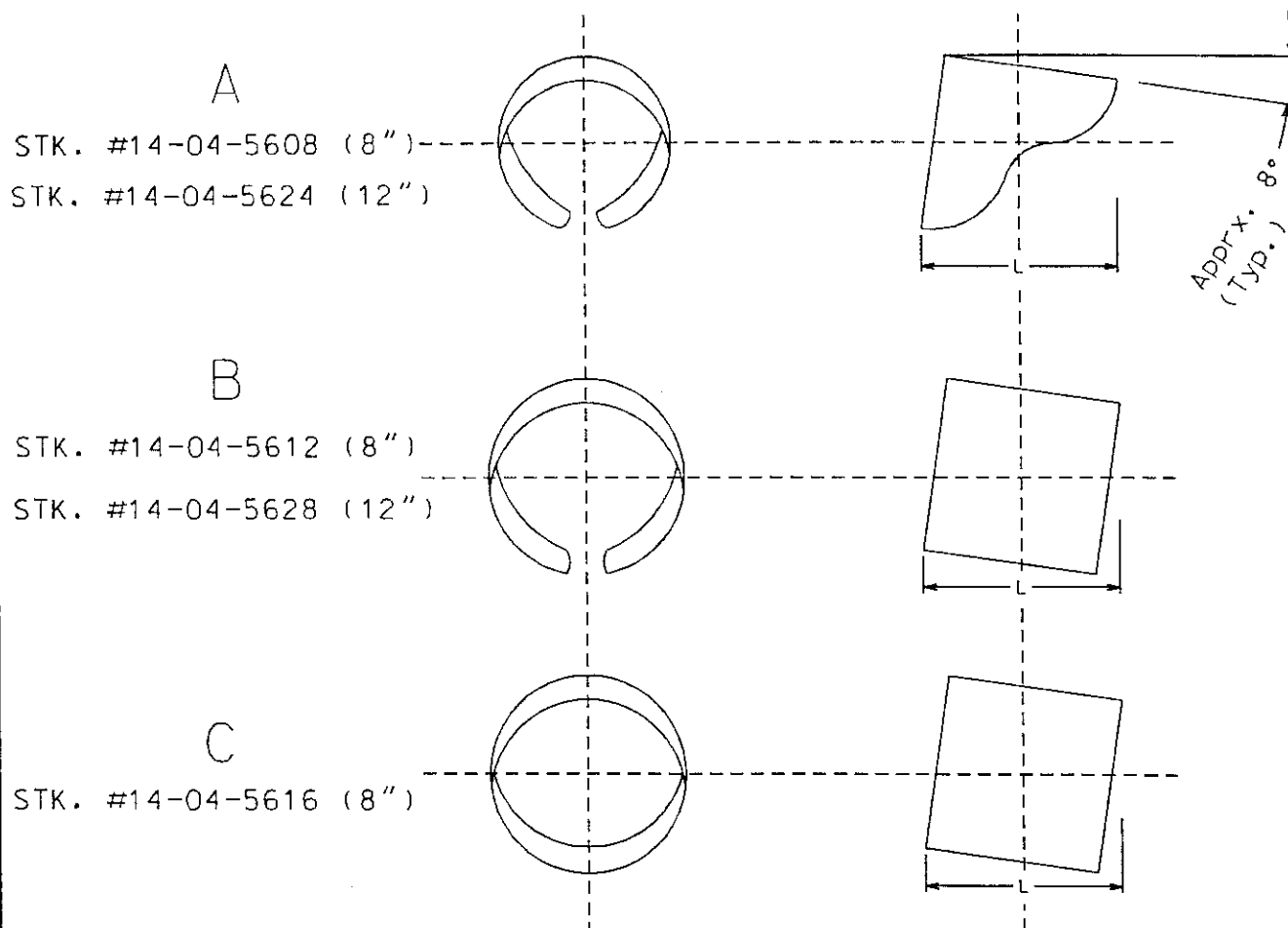
Drawings and Literature

The vendor shall furnish, with the first shipment on each order, ten (10) copies of technical information, including drawings, parts lists, assembly instructions, etc., provided that the order is for 10 or more signal sections. If the order is for less than 10, one (1) copy of technical information shall be provided for each piece of equipment ordered.

Guarantee

The manufacturer shall guarantee the unit to meet the above specifications and operate in a satisfactory manner for one (1) year from the date of acceptance by the Department.

TYPE FRONT VIEW SIDE VIEW



VISOR TYPE	VISOR NAME	LENGTH(8"H)	LENGTH(12"H)
A	Cap	8"	10"
B	Tunnel	8"	11"
C	Full Circle	8"-12" *	11"

* See Note #2

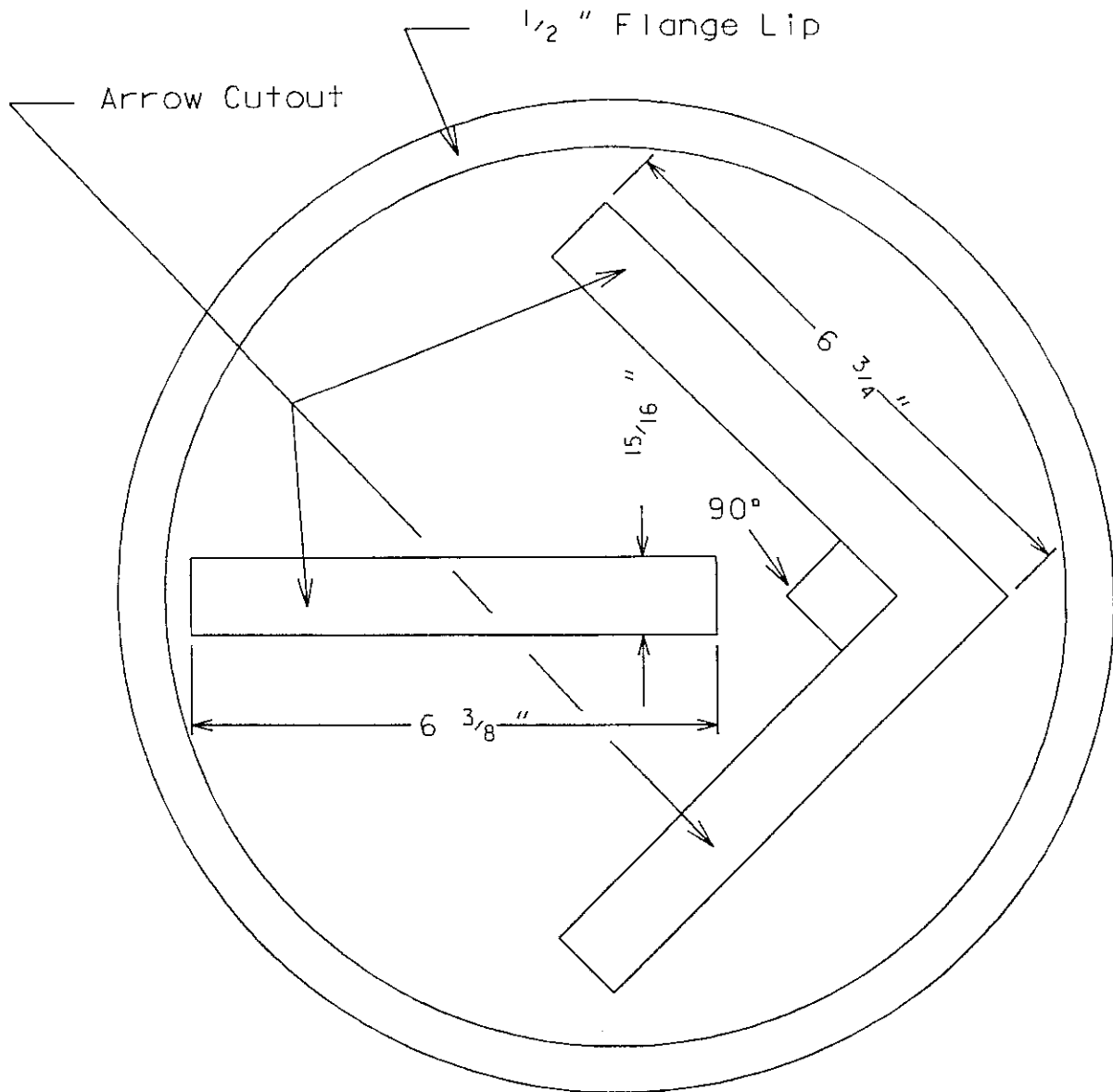
NOTES:

1. Unless otherwise specified, Type A visor shall be furnished as standard.
2. Length of visor to be specified on order.
3. All visor edges shall be deburred and smooth.
4. SEE TCS #1 written specifications for more information.

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
TRAFFIC CONTROL STANDARD NO. 1
VISORS

DRAWN BY: MAA DATE: 6/10/99

FIGURE 1



NOTES:

1. Template viewed from back.
2. When the template is placed in its proper position on the lens, the entire outside surface of the template within the domed area of the lens shall be within $\frac{1}{4}$ " of the inside surface of the lens.
3. Template surface to be coated with black opaque enamel.
4. Template shall be constructed from a non-corrosive metal.
5. Optional for 12" arrow lenses
6. See TCS #1 written specifications for more information.

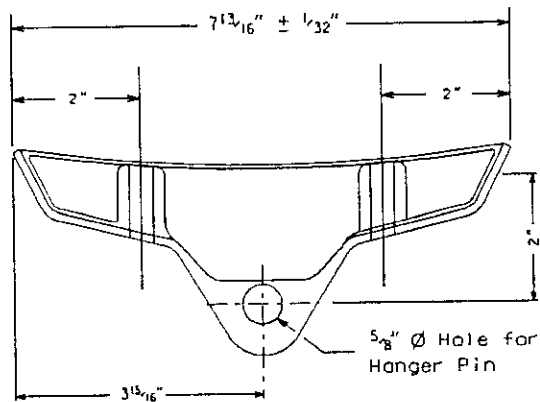
STK.#14-04-5554 (12"- G)

STK.#14-04-5560 (12"- Y)

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
TRAFFIC CONTROL STANDARD NO. 1
ARROW INDICATION TEMPLATE
DRAWN BY: MAA DATE: 6/10/99

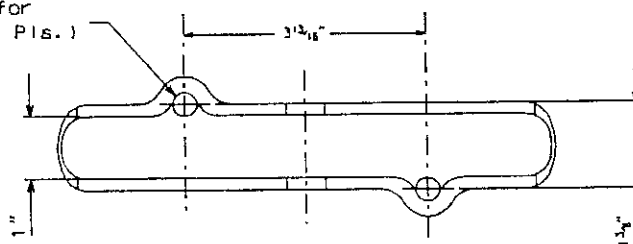
FIGURE 2

SIDE
VIEW



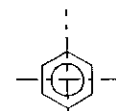
3/8" Ø Hole for
'L' Bolt (2 Pls.)

BOTTOM
VIEW

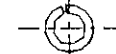


* SEE NOTES 1,2
and 6

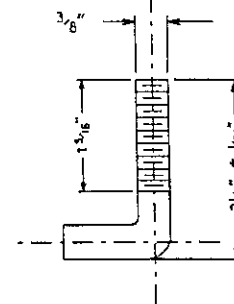
SADDLE



3/8" HEX
NUT



3/8" LOCK
WASHER

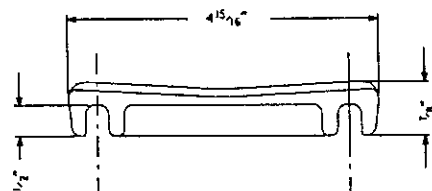


3/8" L-BOLT

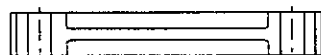
* SEE NOTES 4
and 6

L-BOLT ASSEMBLY

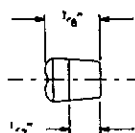
* SEE NOTES 3
and 5



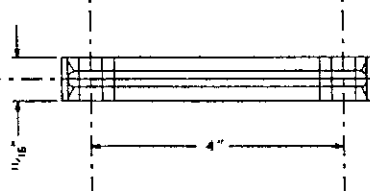
SIDE
VIEW



BOTTOM
VIEW



END
VIEW



TOP
VIEW

CABLE BAR (PROTECTOR)

NOTE:

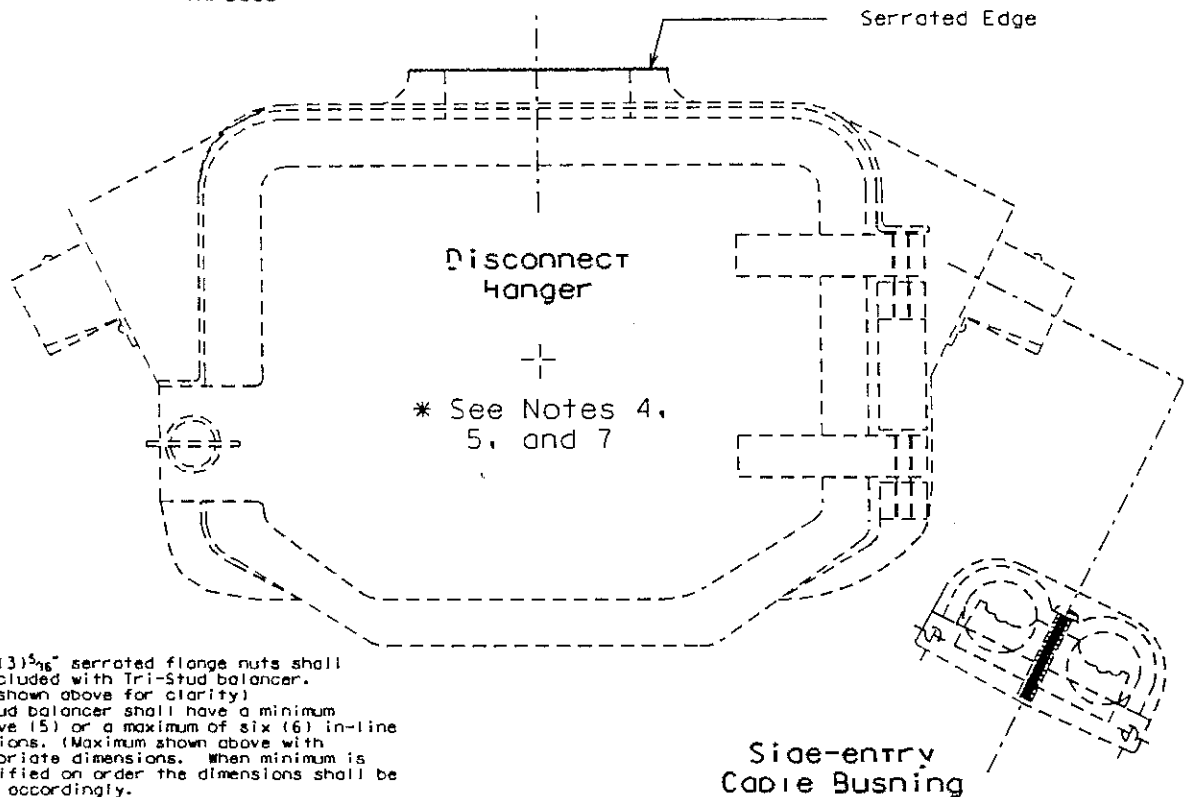
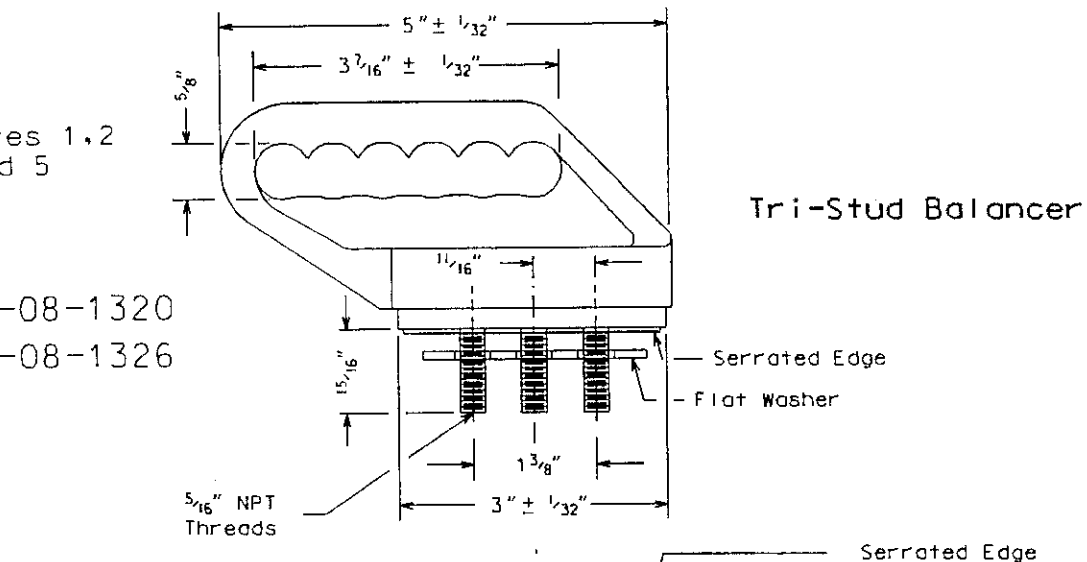
1. Span wire saddle to be designed to fit a cable range of 1/4" - 5/8".
2. 5/8" suspension (Hanger) pin not shown above but shall be included with device (See Note 6).
3. Cable bar (Protector) to fit inside of saddle with bolt slots facing downward as shown in cable bar side view.
4. One (1) L-bolt (3/8" minimum size) to be present at each end of the saddle to hold the cable bar firmly against the cable.
5. Material to be of CAST ALUMINUM construction with coating to prevent oxidization.
6. Material to be of GALVANIZED STEEL construction.
7. SEE TCS #1 written specifications for more information.

STK.#14-08-1310

* See Notes 1, 2
4, and 5

STK.#14-08-1320

STK.#14-08-1326

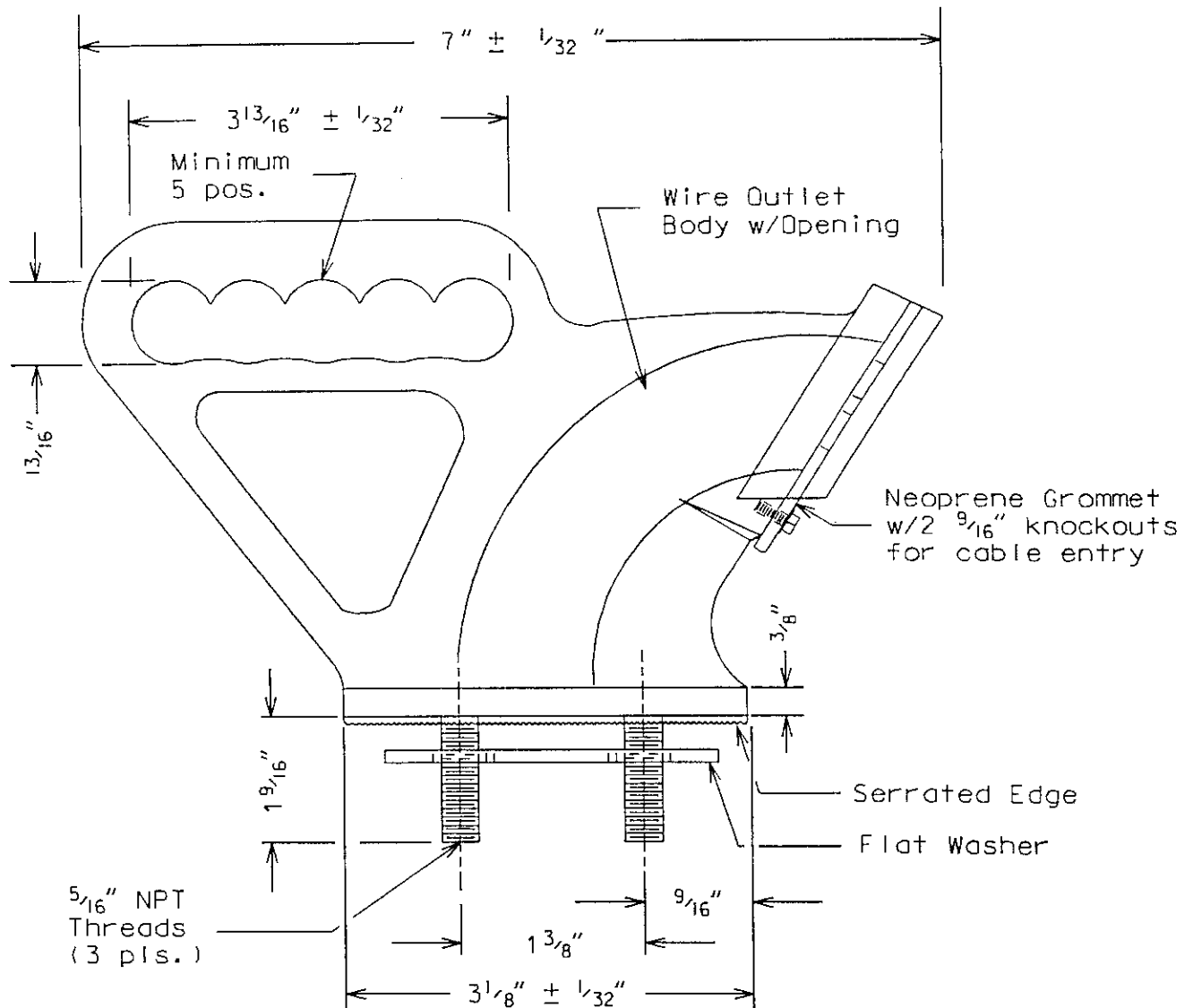


NOTE:

1. Three (3) 5/16" serrated flange nuts shall be included with Tri-Stud balancer. (Not shown above for clarity)
2. Tri-Stud balancer shall have a minimum of five (5) or a maximum of six (6) in-line positions. (Maximum shown above with appropriate dimensions. When minimum is specified on order the dimensions shall be sized accordingly.)
3. One (1) fitting shall be present on each side of the disconnect hanger.
4. Device material to be of cast aluminum construction.
5. Hardware material to be of either zinc-coated or galvanized steel construction.
6. A neoprene grommet may be substituted in place of the cable bushing.
7. Device to be included only when specified on order.
8. THE SIX (6) POSITION DEVICE SHOWN ABOVE SHALL BE FURNISHED AS STANDARD UNLESS OTHERWISE SPECIFIED.
9. SEE TCS #1 written specifications for more information.

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
TRAFFIC CONTROL STANDARD NO. 1
DISCONNECT HANGER ASSEMBLY
DRAWN BY: MAA DATE: 6/10/99

FIGURE 4



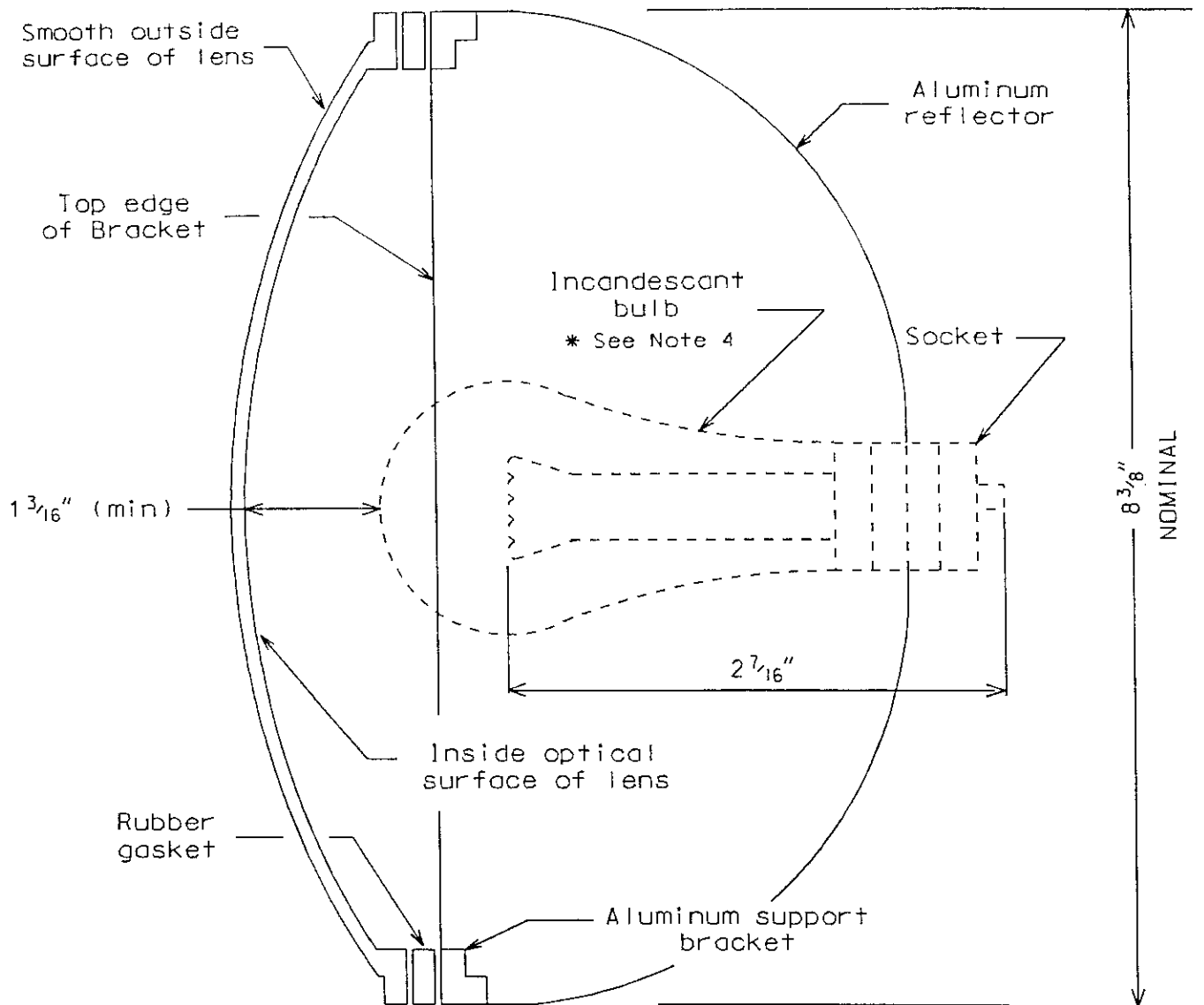
NOTE:

1. Three (3) 5/16" serrated flange nuts shall be included with the device. (Not shown for clarity.)
2. The device shall have a minimum of five (5) or a maximum of six (6) in-line positions. (5 position device shown above with appropriate dimensions. When 6 position device is specified, the dimensions shall be scaled accordingly.)
3. THE FIVE (5) POSITION DEVICE SHOWN ABOVE SHALL BE FURNISHED AS STANDARD UNLESS OTHERWISE SPECIFIED.
4. Device material to be of cast aluminum construction.
5. Device hardware to be either zinc-coated or galvanized steel.
6. SEE TCS #1 written specifications for more information.

STK.#14-04-6000

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
TRAFFIC CONTROL STANDARD NO. 1
TRI-STUD HANGER ASSEMBLY (BEACONS) FIGURE 5
DRAWN BY: MAA DATE: 6/10/99

SIDE VIEW (SECTION)



NOTE:

1. Lens shall be constructed from ultraviolet stabilized plastic and conform to:
(a) Current ITE MATERIAL AND EQUIPMENT STANDARDS Chapter 2, "VEHICULAR TRAFFIC CONTROL SIGNAL HEADS", Section 8.00, "Traffic Signal Lenses"
2. Lens shall be a LEXALITE 8" lens or approved equal.
3. Lens shall be rated at a minimum 116 Watts
4. The 120V, 69 Watt, short-shank incandescent bulb to be supplied by others.
5. Lens shall not be damaged by the 69 watt incandescent lamp.
6. SEE TCS #1 written specifications for more information.

STK.#14-04-5510 (R)

STK.#14-04-5512 (Y)

STK.#14-04-5514 (G)

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
TRAFFIC CONTROL STANDARD NO. 1

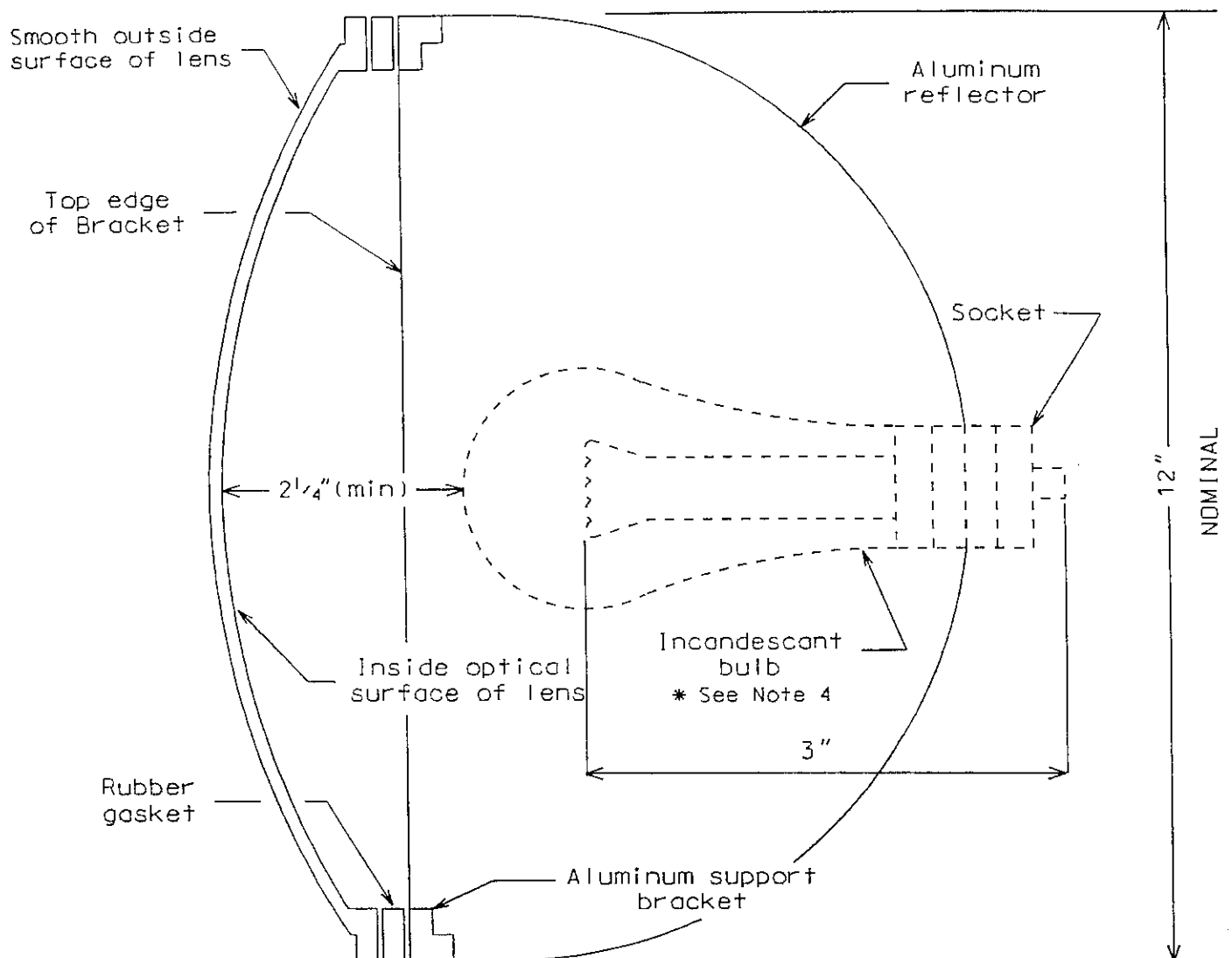
8" SIGNAL LENS

FIGURE 6

DRAWN BY: MAA

DATE: 6/10/99

SIDE VIEW (SECTION)



NOTE:

1. Lens shall be constructed from ultraviolet stabilized plastic and conform to:
(a) Current ITE MATERIAL AND EQUIPMENT STANDARDS Chapter 2, "VEHICULAR TRAFFIC CONTROL SIGNAL HEADS", Section 8.00, "Traffic Signal Lenses".
2. Lens shall be a LEXALITE 12" lens or approved equal.
3. Lens shall be rated at a minimum 150 Watts.
4. The 120V, 135 Watt, short-shank incandescent bulb to be supplied by others.
5. Lens shall not be damaged by a 150 watt incandescent lamp.
6. SEE TCS #1 written specifications for more information.

STK.#14-04-5520 (R)

STK.#14-04-5522 (Y)

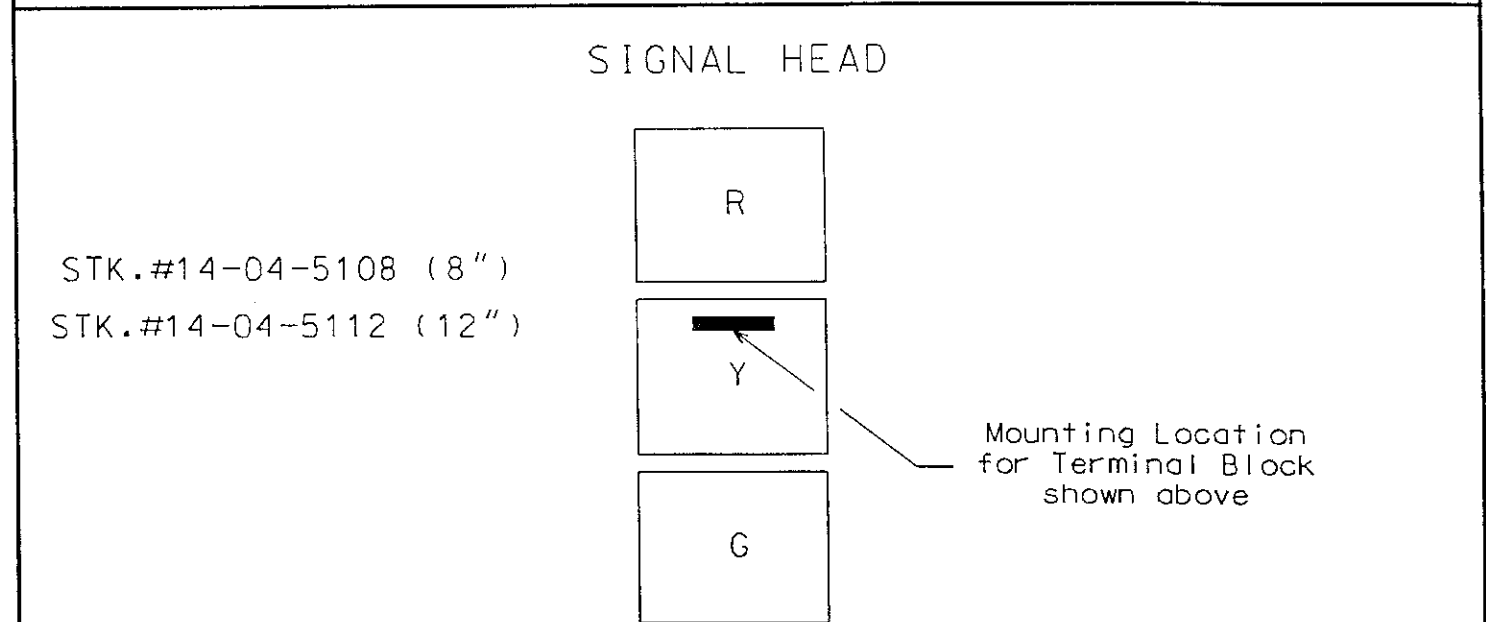
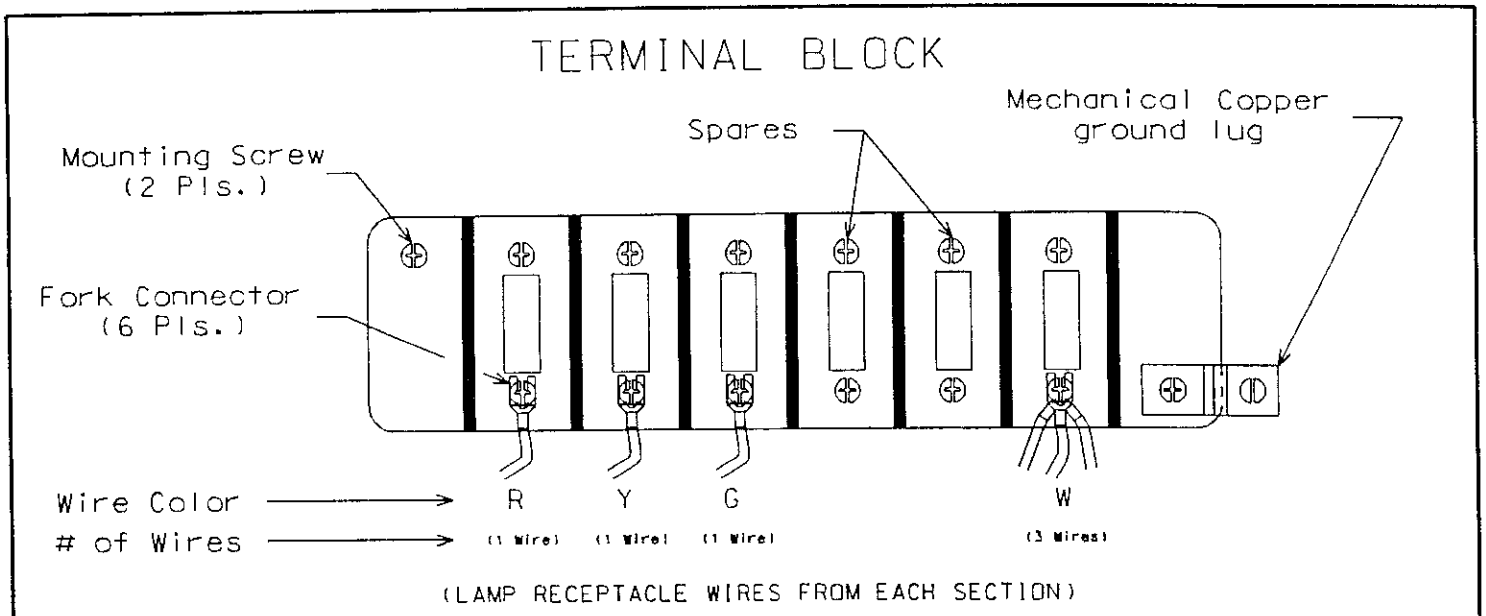
STK.#14-04-5524 (G)

Lens and Lamp are Optional

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
TRAFFIC CONTROL STANDARD NO. 1
12" SIGNAL LENS

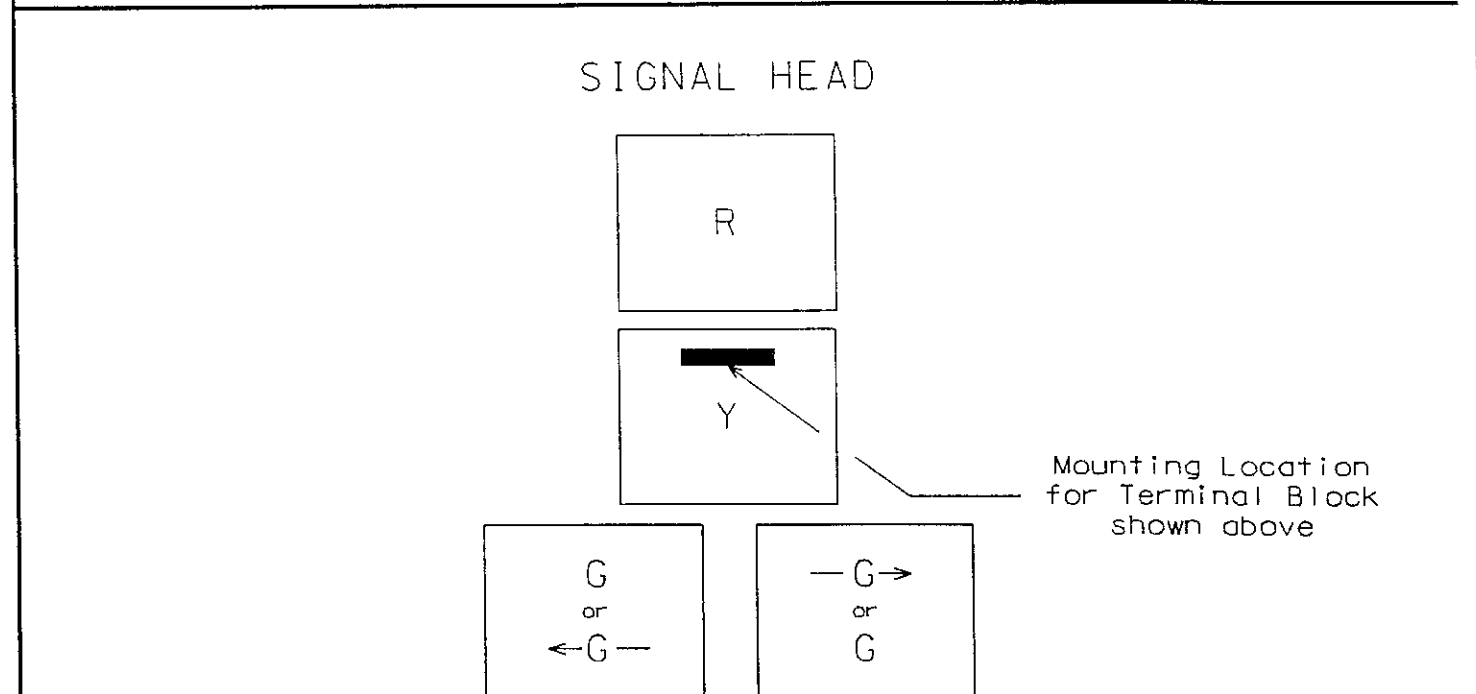
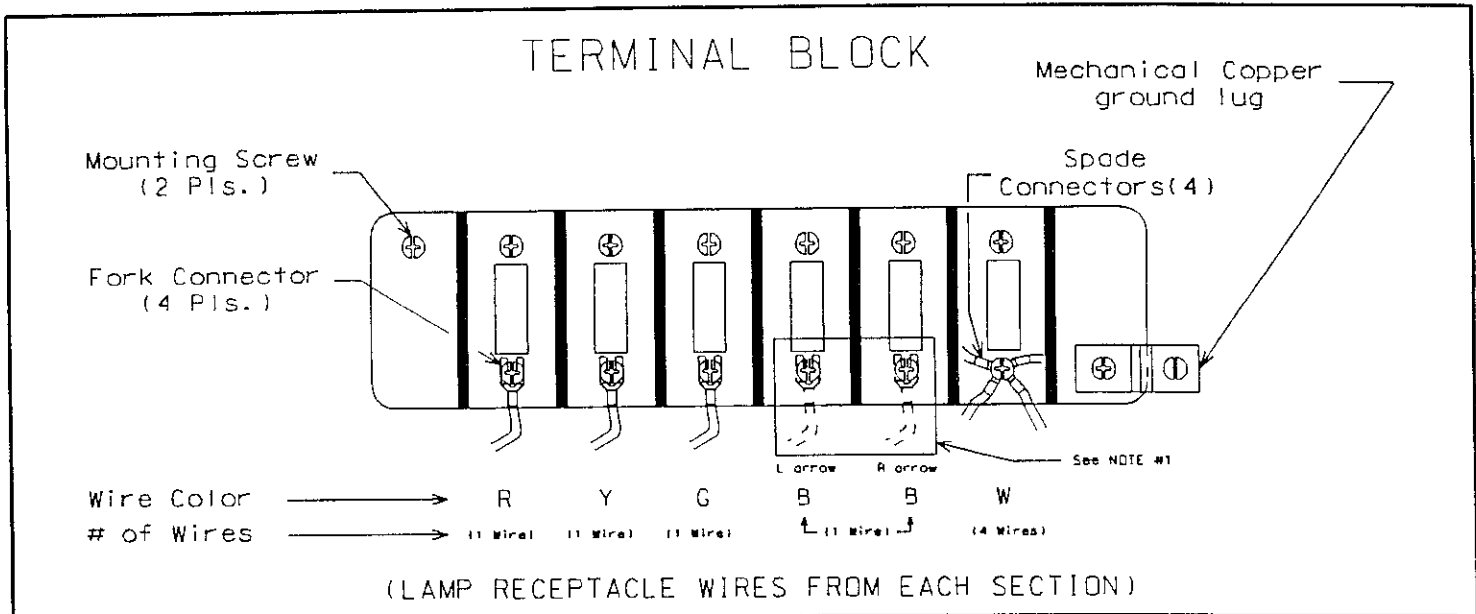
FIGURE 7

DRAWN BY: MAA DATE: 6/10/99



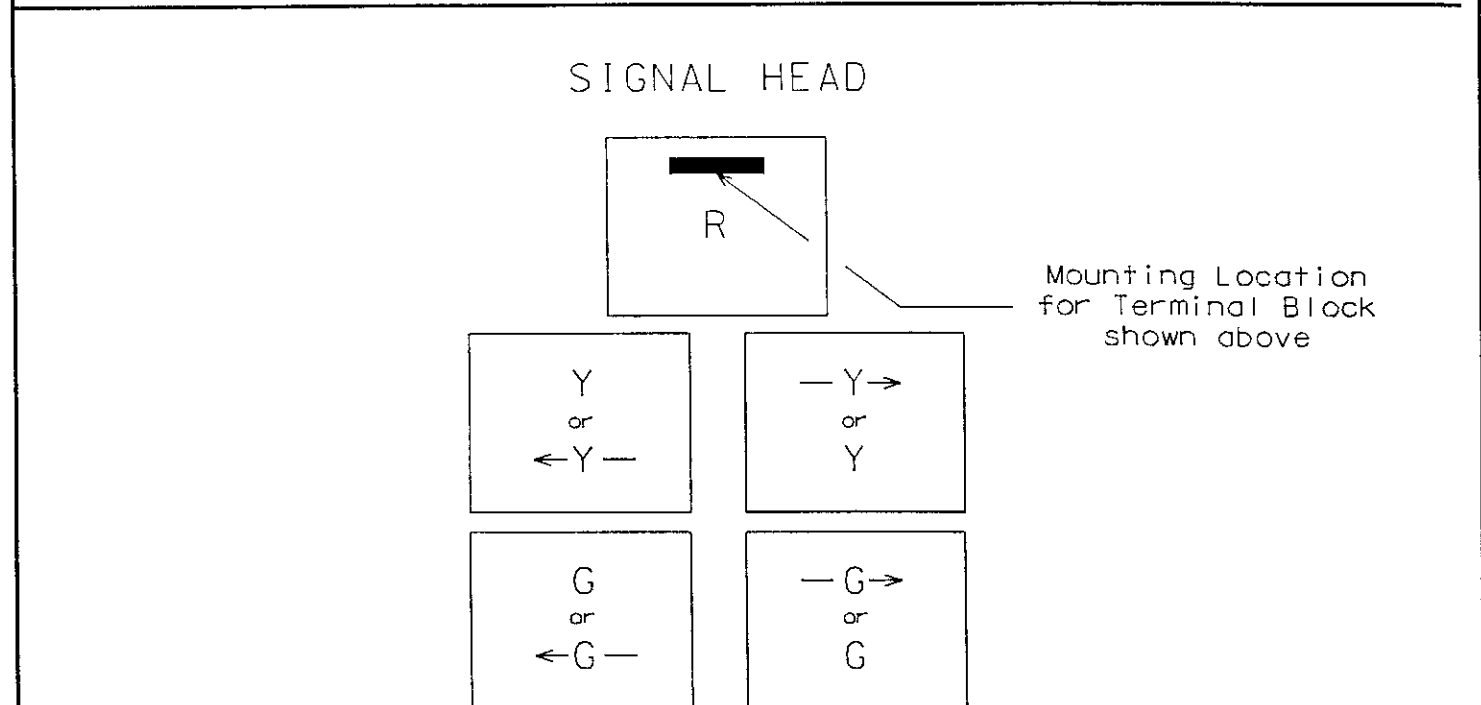
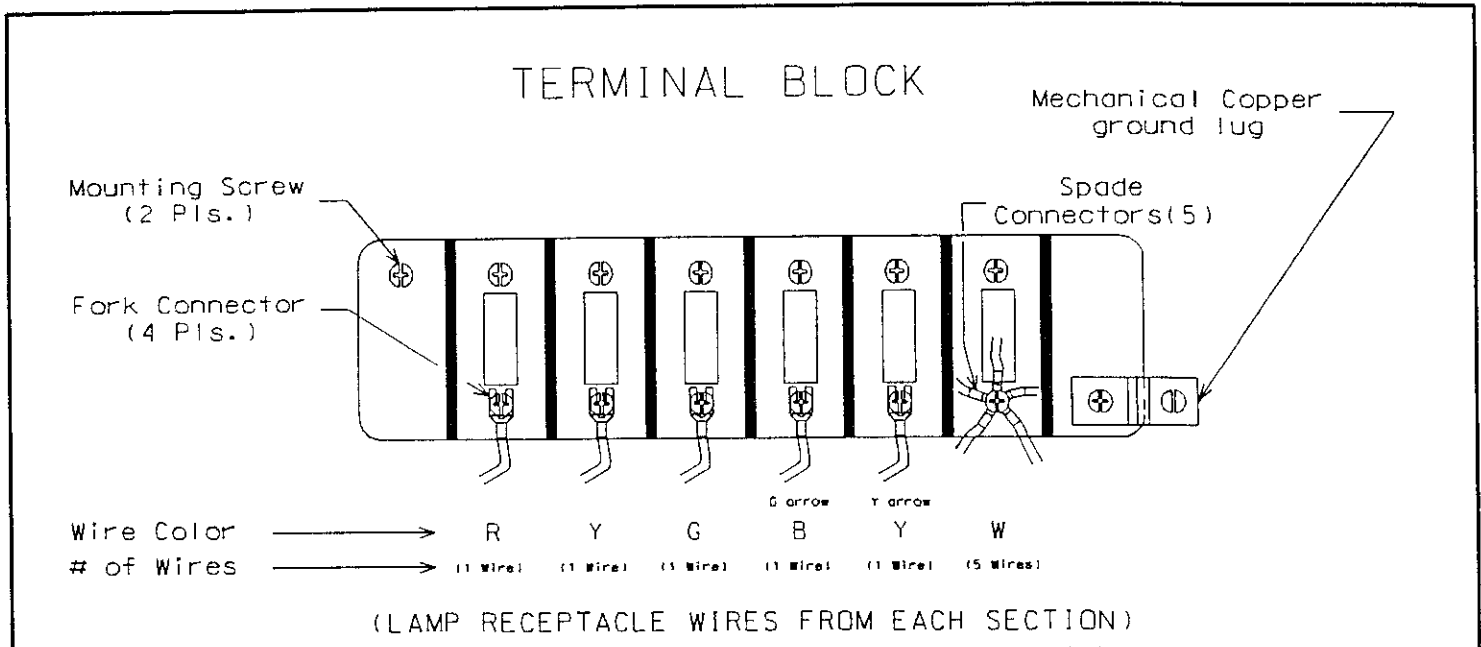
NOTE:

1. All wires shall be of sufficient length to allow the reflector to open completely without disconnecting any circuits.
2. FIGURE ABOVE SHALL APPLY WHEN 3-SECTION SIGNAL HEADS ARE SPECIFIED.
3. SEE TCS #1 written specifications for more information.



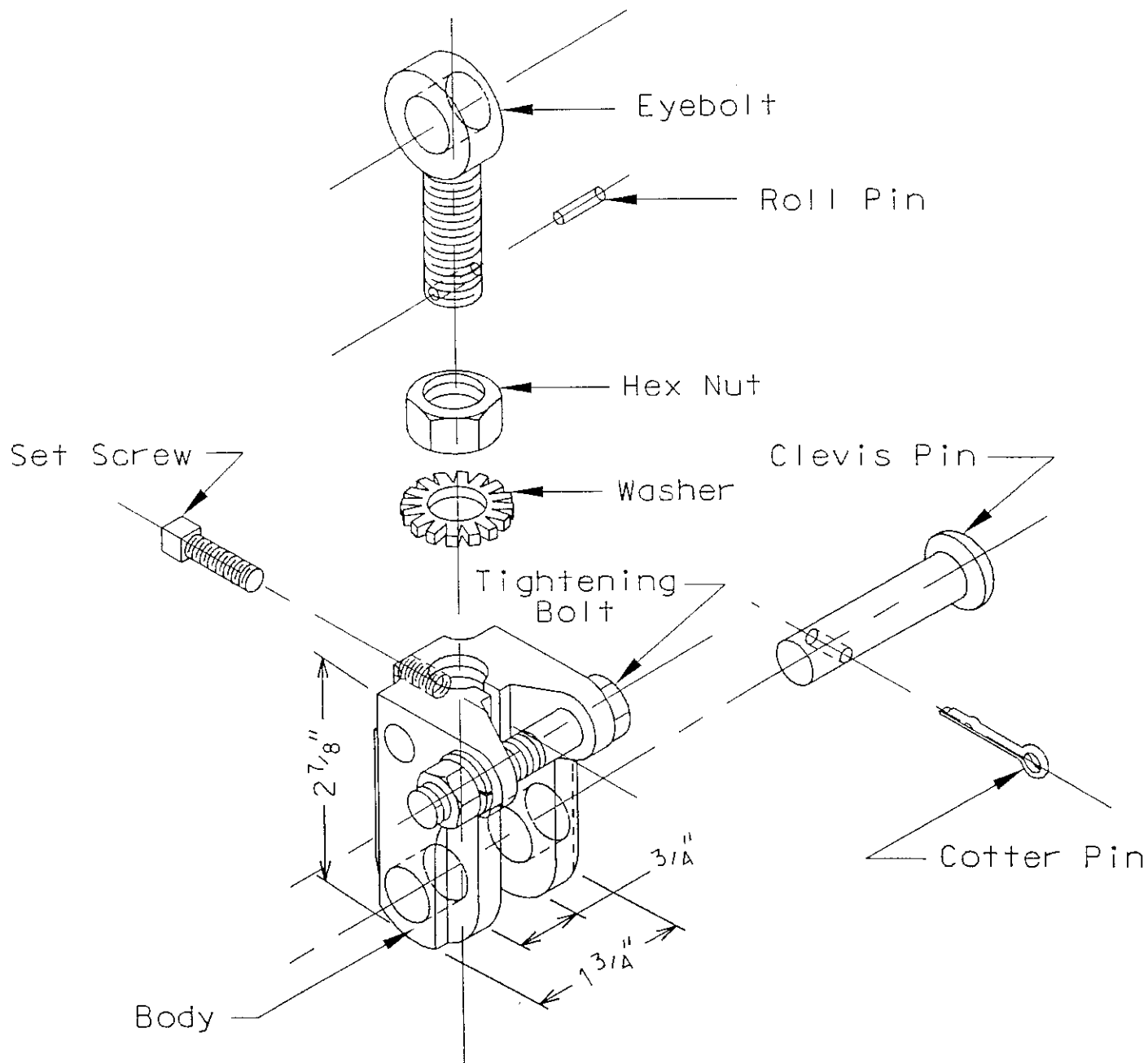
NOTE:

1. A LEFT or RIGHT arrow indication must be specified on the order for proper location of the Arrow indication wire.
2. All wires shall be of sufficient length to allow the reflector to open completely without disconnecting any circuits.
3. FIGURE ABOVE SHALL APPLY WHEN 4-SECTION SIGNAL HEADS ARE SPECIFIED.
4. SEE TCS #1 written specifications for more information.



NOTE:

1. FIGURE ABOVE SHALL APPLY WHEN 5-SECTION SIGNAL HEADS ARE SPECIFIED.
2. All wires shall be of sufficient length to allow the reflector to open completely without disconnecting any circuits.
3. SEE TCS #1 written specifications for more information.



STK.#14-04-6085

NOTES:

1. All material, less clevis pin, to be of galvanized steel construction.
2. Clevis pin to be of zinc coated steel material.
3. See TCS #1 written specifications for more information.

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
TRAFFIC CONTROL STANDARD NO. 1
BALANCE ADJUSTER ASSEMBLY
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FIGURE 11